



# RF



**ORANGE COUNTY AMATEUR RADIO CLUB**  
**VOLUME XXXX NO.7 P.O. BOX 3454,TUSTIN,CA.92781 July 1999**

Web Site [Http://www.w6ze.org](http://www.w6ze.org)

### The Prez Sez:

The Prez is off taking care of some personal business so I get to fill in this month. Hopefully, everyone who will be manning the booth at the Orange County Fair on July 14th will have gotten their packages and will give a good account of the club. A reminder, we are doing the Wouff Hong ceremony at the convention and we will be getting together soon to organize and rehearse. So if you have a part you want to play let me know.

Notice: The Board Meeting will be held on Sunday Aug 8th at Ken W6HHC's QTH at 2 PM.

No breakfast meeting in august ! ! ! Most of the Board members will be working the California Classic that Saturday. Come September, the Board meeting will be back at Coco's at the regular time.

Our Guest Speaker for the July Meeting will be John De Boer, KD6ZKC, who will give us a presentation on Solar Power Systems. Should be a really good topic.

That's all for now and we'll see you on the bands.

73 de Chris KJ6ZH, Vice President.

### **Red Cross Corner**

Don't forget to set you calendar for the weekend of July 31", August 1" to upgrade or renew you card. Plan on starting at 8:00am Saturday and possibly Sunday to complete. Check with Bob KD6BWH for updates.

73, wa6vpp Bud

## BOARD OF DIRECTORS 1999

President.....	Bud Barkhurst.....	WA6VPP.....	774-6361
Vice President.....	Chris Breller.....	KJ6ZH....	310-925-9127
Secretary.....	Cory Terando.....	KE6WIU.....	894-3817
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Technical.....	Frank Smith.....	WA6VKZ.....	838-3180
Member at Large....	Larry Hoffman.....	K6LDC.....	636-4345
Member at Large....	Bob Buss.....	KD6BWH.....	534-2995

## CLUB APPOINTMENTS

Club Historian.....	Bob Evans.....	WB6IXN.....	543-9111
W6ZE Trustee.....	Bob Eckweiler.....	AF6C.....	639-5074
RF Editor.....	Bud Barkhurst.....	WA6VPP.....	774-6361
Refreshments.....	Art Dillon.....	KE6WOX.....	997-2078
Field Day Chairman.	Chris Breller.....	KJ6ZH....	562-925-9157
ARRL Liason.....	Frank Smith.....	WA6VKZ.....	838-3180
ARRL Award Managers...	Larry Bellin....	K6VDP.....	557-7217
	Art Dillon.....	KE6WOX.....	997-2078
RED CROSS Liason-----	Bob Buss-----	KD6BWH-----	534-2995

## DUES

Regular Members.....\$20.00    Additional Members.....\$10.00ea  
 Teenage Members.....\$10.00    Optional Club Badge.....\$5.00ea  
 Dues for new members are pro-rated quarterly from January First  
 each year. Family members must reside at the address of a  
 regular member. Only one RF is sent per household.

### 222 Mhz Band Plan

Channel	Freq	Ctcss	Location
1	223.50		Simplex
2	223.76	94.8	Huntington Beach
3	223.76	110.9	Sierra Peak
4	223.92	151.4	Costa Mesa
5	223.98	103.5	Johnstone Peak
6	224.00	162.2	Big Bear
7	224.02	100.0	Johnstone Peak
8	224.12	110.9	Hemet
9	224.18	103.5	Fullerton
10	224.24	82.5	Perris
11	224.28	127.3	Alta Loma
12	224.34	156.7	Keller Peak
13	224.44	107.2	Corona
14	224.46	110.9	Box Springs
15	224.50	162.2	La Habra
16	224.56	110.9	Running Springs
17	224.68	141.3	Corona
18	224.72	127.3	Chino Hills
19	224.74	136.5	Yucca Valley
20	224.86	77.0	Crestline

# 1,200 Mhz Band Plan

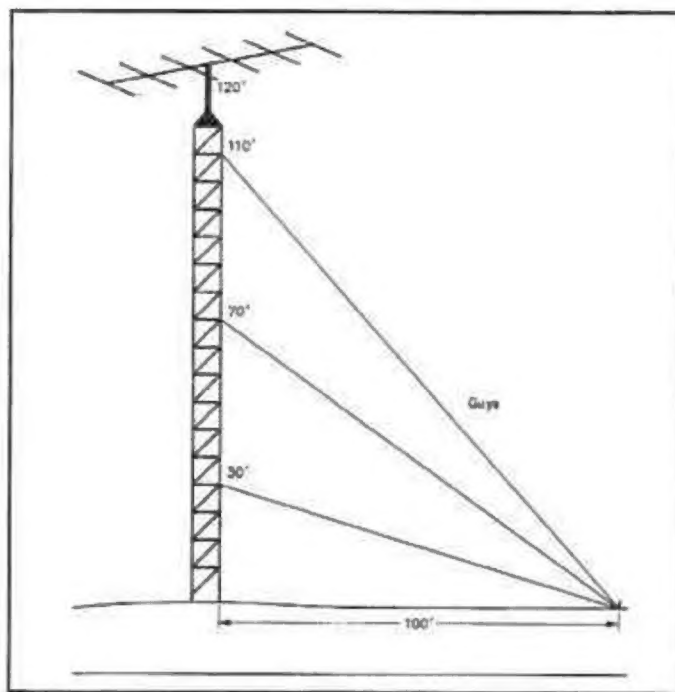
Channel	Freq	Ctcss	Location
1	1282.025	88.5	Santiago Peak
2	1282.125	114.8	Mt. Harvard
3	1282.200		Signal Hill
4	1282.225	103.5	Huntington Beach
5	1282.250		Mt. Wilson
6	1282.275	88.5	Sierra Peak
7	1282.425	127.3	Sunset Ridge
8	1282.525	88.5	Signal Peak
9	1282.675		El Sereno
10	1282.725	88.5	Bolero Peak
11	1282.825	162.2	Sunset Ridge
12	1282.850		Santa Ana
13	1282.925		Sky Forest
14	1283.150	85.4	Orange
15	1283.200	192.8	Mount R
16	1283.350		Irvine
17	1283.525	103.5	Mission Viejo
18	1284.000		Costa Mesa
19	1285.300	100.0	Mt Disappointment
20	1294.500		National Simplex

## A tower project is a difficult undertaking—and so is this quiz!

After much deliberation and penny-pinching, you have decided that no less than 120 feet of steel rising above your domain will do the job. After reviewing your wind loading and antenna requirements, the manufacturer's table dictates that the tower is to be guyed on three sides at heights of 110 feet, 70 feet, and 30 feet above the ground. The guy points are to be at a distance of 100 feet from the tower.

Based on the tower I've just described...

1. How much guy wire is required, including an extra 5% for clamping and wastage?
2. If the guys are to be broken with insulators at intervals of 27 feet, starting at the tower, how many insulators are required?
3. What is the minimum dimension of a rectangular plot of ground on which this project can be erected and still leave 3 feet from the guy points to the property line?
4. What is the maximum height (other than in the top 10 feet) at which a rotating Yagi with a 30-foot boom (mounted at the mid-point) and a reflector length of 28 feet can be side mounted? (Ignore sag in guy wires and antenna material.)
5. If a 160-meter dipole cut for 1.850 MHz is tied to the top of the tower, and the opposite end is at ground level (assuming flat ground), how far will the opposite end be from the base? If the feed cable is to connect to a switch box at the tower base and drops vertically to ground level from the feed point, how much cable is required?
6. If the distance traveled in free-fall is  $\frac{1}{2}gt^2$ , how long will it take that nut you just dropped from the top of the tower to hit the ground? (ie, How long does the ground crew have to get out of the way?) Use a value of  $32 \text{ ft/sec}^2$  for  $g$ , the acceleration of gravity.



22916-107th Ave SW  
Vashon, WA 98070

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The second parts are pretty easy if you use a simple trick—the feed point is exactly in the middle of the dipole, isn't it? That means that it's  $120/2 = 60$  feet above the ground and  $222.7/2 = 111.4$  feet from the tower for a total of  $171.4$  feet of cable.

6. Ground crews, pay attention! Neglecting air resistance, that nut gets to the ground in 2.75 seconds. If the guy at the top yells as he drops it and the sound gets to the ground in about a tenth of a second, and you're paying attention and react in three-quarters of a second, you've got less than 2 seconds to vamoose. Better leave the discussion of DXing techniques until later.

Now figure the distance below the guy point at which the guy wire is at least 20.5 feet from the tower:

$$\text{angle} = \arcsin(\text{height} / \text{guy length}) = 42^\circ$$

Since this is a shorter distance than to the next lowest guy point (40 feet between guy points), you can mount the Yagi at a height of 87.2 feet. Better not cut it quite so close, though. A height of 75 to 80 feet will keep the antenna well clear of any electrical interactions with the guys and give you room to work with the antenna.

5. Using our favorite formula for the length of a dipole ( $468/f$ ), the length is found to be 253 feet. With one end at 120 feet, the other is on the ground this far from the tower:

$$\text{distance} = \sqrt{[(\text{length})^2 + (120')^2]} = 222.7 \text{ feet}$$

1. Solve for the hypotenuse of each of the three triangles formed by a guy wire, tower, and the ground by using the formula:

$$\text{guy wire length} = \sqrt{[(\text{attachment height})^2 + (100 \text{ feet})^2]}$$

The top guy is 148.7 feet, the middle 122 feet, and the bottom 104.4 feet for a total of 375.1 feet per side. Totalling all three sides gives 1125.4 feet, plus 5% is 1181.7 feet. Better order at least 1200 feet.

2. Start at the tower end of each guy wire and mark off 27-foot increments. The top guy has 5 insulators, the middle 4, and the bottom 3 for a total of 12 insulators per side and 36 total. Don't forget that you'll need two sets of cable clamping hardware at each insulator!

3. The minimum dimension across an equilateral triangle goes from one vertex (ie, guy point) straight through the center (ie, tower) to the opposite side. This distance is 1.5 times the distance from any vertex to the center. In the case of this tower, the minimum distance across the triangle is 150 feet. Add 3 feet on each side for the property line and the minimum width of the land must be 156 feet.

4. The question asks how high the antenna can be mounted without bumping any of the guy wires. First, figure the turning radius of the antenna: turning radius =

$$\sqrt{\left(\frac{1}{2} \text{ boom length}\right)^2 + \left(\frac{2}{1} \text{ reflector length}\right)^2} = 20.5 \text{ feet}$$

Being optimistic, start at the top guy point on the tower and work down from there. Sketch the triangle to help visualize the problem.

Answers



## LEAGUE URGES FCC TO EXPEDITE RESTRUCTURING

The ARRL has urged the FCC to act "without delay" on Amateur Radio restructuring and has suggested that the Commission adopt the League's restructuring plan as its own in order to speed up the process. In a May 19 letter to the FCC, the League said that the state of limbo created by the current FCC Amateur Radio restructuring proceeding, WT Docket 98-143, is stifling Amateur Radio's growth, as current and prospective hams await an FCC Report and Order.

The League asked the FCC to adopt the League's restructuring plan in a Report and Order "at the earliest possible time."

The ARRL told the FCC that its comprehensive plan of four license classes and two Morse code testing tiers—5 WPM and 12 WPM—plus refarming of the Novice/Technician Plus HF CW subbands "constitutes a reasonable middle ground proposal." The ARRL's restructuring proposal formed the core of the League's comments to the FCC on WT 98-143, which the FCC refers to as the Part 97 Biennial Review.

Both the FCC and ARRL proposals would eliminate the Novice and Tech Plus licenses. The ARRL's letter stressed that "refarming" of the Novice class subbands was "the most critical portion of the League's comprehensive plan, or, indeed, of any license restructuring plan the Commission may adopt." The League said refarming was essential to make room for anticipated additional licensees using SSB HF subbands. In addition, the League said, refarming "is absolutely necessary to preserve and enhance the incentive self-training program" and to ensure more efficient use of limited HF allocations. Under the League's plan, General, Advanced, and Extra class licensees would get additional HF spectrum for phone operation.

The League said that adopting its restructuring plan *in toto* was "the best means of accomplishing increased growth in the Amateur Service" and of continuing Amateur Radio's value as a "cornerstone of telecommunications development."

The League also took the opportunity to express appreciation for the support for the Amateur Service by both FCC Chairman William Kennard and WTB Chief Thomas Sugrue and to thank the FCC for the renewed enforcement efforts of Compliance and Information Bureau Chief Richard Lee and CIB Legal Advisor Riley Hollingsworth, K4ZDH.

July 1999 QST

## A letter from a blond Y2K Engineer

I hope I haven't misunderstood your instructions. Because, to be honest, none of this Y to K problem makes sense to me. At any rate, I have finished converting all the months on all company calendars so that the year 2000 is ready to go with the following: **Januark, Februark, Mak, Julk.**

## Spelling Checker

Eye haive a spelling chequer. It came with my pea sea. It plainly marques four my revue, Miss steaks eye kin knot sea. Eye strike a key and type a word, and weight four it two say weather eye am wrong oar write. It shows me strait a weigh. As soon as a mist ache is maid, it nose bee fore two long and eye can put the error rite. Its rare lea ever wrong. Eye have run this poem threw it, I am shore your pleased two no. Its letter perfect awl the weigh. My chequer tolled me sew. —*Sauce unknown*

## A WARNING WELL TAKEN ----

It is distressing to see so many amateurs abandoning HF-VHF digital in favor of E-Mail. As more "defect" to E-Mail, the less the amateur frequencies will be used and the greater chances we will lose frequency privileges. Many Sysops are seriously considering closing their BBS'S.

## FCC SAYS NO TO EXPANDING SPECIAL EVENT CALL SIGN PROGRAM

The FCC has denied the ARRL's petition that sought to expand the Amateur Radio special event call sign program. The League had asked the FCC to amend its rules to permit the use of special event call sign formats that go beyond the current one-by-one (1x1) format now authorized. The petition also had asked the Commission to include within the special event program call signs denoting US territories and possessions having no mailing address.

ARRL Executive Vice President David Sumner, K1ZZ, called Terry's decision "somewhat disappointing."

In an April 21 letter to League, D'Wana Terry, chief of the Public Safety and Private Wireless Division within the Wireless Telecommunications Bureau said the FCC was "not persuaded that the requested changes to the system are warranted at this time." The League's petition was submitted May 18, 1998, but it was never assigned a rulemaking number or put out for public comment.

The special event call sign program is administered by several private sector coordinators, including the ARRL. Those wanting a special event call sign for a limited

period are able to reserve one via the Internet. Under current rules, 750 combinations of 1x1 format call signs are available for limited periods.

In its petition, the League said there has been significant demand for special event call signs outside of the 1x1 format and for DXpeditions to locations under US jurisdiction that lack US Postal Service addresses. The League also said that there has been "a great deal of interest" in additional special event call sign formats that would let the call sign symbolize a particular event.

Terry said the FCC has not received any indication from the Amateur Radio community that demand for special event call signs exceeded the number available. She also said the need to create additional formats was outweighed by the complexity of creating them. She advised more experience with the current system before deciding to change it, and she urged the League to continue to monitor demand for special event call signs. Sumner said he was encouraged that the FCC, while denying the petition, had invited the League to revisit the issue later.

## Profit &amp; Loss Statement

1/1/99 Through 6/18/99

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Category Description	1/1/99- 6/18/99
<b>INCOME</b>	
ARRL Income	96.00
Badge Income	10.00
Donation - W6NGO Trust Fund	350.00
Dues, Family	75.00
Dues, Membership	685.00
Raffle Reg Income	239.00
Refreshments Income	54.22
<b>TOTAL INCOME</b>	<b>1,509.22</b>
<b>EXPENSES</b>	
ARRL Expense	90.00
Awards	12.09
Badges Expense	11.15
Field Day Other	73.17
PO Box Rental	44.00
Raffle Expense	176.08
Refreshments Expense	33.60
RF Postage Expense	99.00
RF Printing Expense	97.43
Supplies	13.67
Web Page Exp	358.50
World Radio	65.00
<b>TOTAL EXPENSES</b>	<b>1,073.69</b>
<b>TOTAL INCOME - EXPENSES</b>	<b>435.53</b>

## The Cat

CURRENT \$1,737.69

A cat dies and goes to heaven. God meets him at the gate and says, "You have been a good cat all these years. Anything you desire, all you have to do is ask."

"Well," the cat says, "I lived all my life on a farm and had to sleep on hard wooden floors." "Say no more," says God, and instantly a fluffy pillow appears.

A few days later, six mice are killed in a tragic accident and they go to heaven. God meets them at the gate with the same offer he made to the cat.

"All our life," the mice say, "we've had to run. Cats, dogs, and women with brooms have chased us. If we had roller skates, we wouldn't have to run any more."

God says he can take care of it, and instantly, each mouse is fitted with a beautiful pair of tiny roller skates.

A week later, God checks in on the cat, who is asleep on his pillow. God gently nudges him awake and asks, "How are you doing? Are you happy here?"

"Never been happier," says the cat, stretching and yawning. "And those meals on wheels you've been sending over are great!"

## Club Nets

<u>Band</u>	<u>Mode</u>	<u>Day</u>	<u>Local Time</u>	<u>Freq.. MHZ</u>	<u>Net Control</u>
10 Meters	SSB	Wednesday	7:30 P.M.	28.375*	AF6C
2 Meters	FM	Wednesday	8:30 P.M.	146.550 Simplex	WB6IXN

(Listen for W6ZE, Net Control)

\*Plus or Minus QRM

### General Meeting

July 16<sup>th</sup>  
Aug 20<sup>th</sup>  
Sept 17<sup>th</sup>

General Meeting is the third Friday of each month, 7:30 P.M.,  
AMERICAN RED CROSS facilities.  
601 N. Golden Circle Dr., Santa Ana, Ca.  
Major cross streets: Fourth Street and Tustin Ave.  
Talk-in frequency 146.550 MHZ, simplex.

### Board Breakfast

Aug 7<sup>th</sup>  
Sept 4<sup>th</sup>  
Oct 2<sup>nd</sup>

Board Meeting is the first Saturday of each month, 8:00 A.M.  
COCO's Restaurant ----- Members and Visitors are welcome.  
2585 N. Tustin Ave., Orange, Ca.  
Exit the 55 FWY at Lincoln Ave., West to Tustin Ave., Left on Tustin,  
Restaurant on the East side. (Across from Ford Agency)



Orange County Amateur Radio Club Inc.  
P.O. Box 3454  
Tustin, Ca., 92781



## First Class Mail

To:

Your Personal Copy

W6ZE  
BOB EVANS  
701 S. KILSON DR.  
SANTA ANA, 92701

Time Dated Material  
Please Rush

